

THE macdonald Journal

SEPTEMBER, 1973



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THE MACDONALD LASSIE

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In This Issue

Cover: Litter resulting from frozen-
thawed boar semen. Photo courtesy
Drs. Wilmut and Polge, A.R.C. Unit
of Reproductive Physiology & Bio-
chemistry, Cambridge, England. See
article page 3.

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JOURNAL JOTTINGS

Although it has been with the usual
concern and interest that this issue
has been assembled, I must admit
that being only hours away from
holidays my thoughts have been
torn between the tasks at hand
and the weeks ahead. As I head
for the open country I wish that
those few weeks could be extended
and made into a busman's holiday
whereby I could meet some of
our readers in their homes or at
their fairs, festivals, and meetings.
It would be fun and it would be
an excellent opportunity to learn
at first hand how the Journal is
serving you.

Possibly, one day, this may be
arranged but in the meantime, as
Gordon Bachman mentions in his
editorial, he would like to hear
from you, and so would I. Space
permitting we could possibly
arrange to publish letters concern-
ing the Journal's contents from
time to time. Communication at
its best is a two-way affair. How-
ever, I'm not concerned that my
desk will be buried in mail when
I return — I'll be back in the office
putting together the next issue
before you read this.

Hazel M. Clarke

Another school year is upon us and Macdonald College is still here. This is despite all the rumors, reports, and statements that the interests of agricultural higher education would be best served by moving the Faculty to Quebec City or to the McGill Campus.

In the one and one half years that I have been at Macdonald these statements and reports have seemed to appear as regularly as the coming of spring. It is likely that we will continue to hear of them in the years ahead. The strategy behind such statements seems to be that if we continue to talk about a move, then sooner or later it will come about as the Faculty will become weary of countering these statements and accept the change as inevitable.

Aside from the long range wisdom of transplanting a college of agriculture with its new areas of renewable resource development into a metropolitan setting isolated from the Farm and Arboretum research facilities, Macdonald College is planning this next year's activities with the idea of expanding its academic programs and community service.

Recently the Faculty has recommended the formation of a Division of Environmental Sciences that would complement the already existing Division of Renewable Resource Development and the other three divisions within the College. This is a move that could greatly strengthen the College and have appeal to a wider range of students than we already have.

We are also planning to expand our extension and community service programs for the coming year. Our Extension Evening Course program is being expanded with a greater course offering in the areas of applied agriculture. Macdonald is planning again to offer an agricultural Manpower retraining course in addition to making a joint evaluation with Laval University on agricultural adult education programs in Quebec. We are also in the process of hiring new staff members to work with rural community groups and to provide a more direct information link between the College and farms in Quebec. We are also planning our annual Macdonald Farm Days to be held in October.

Such types of activities are necessary not only to serve the needs of the rural community but also to justify our existence as a college of agriculture. If universities or any other public agency become so inward looking that they are no longer in touch with peoples' needs and wants, then surely there can be little justification for spending public money for their operation. In the case of Macdonald, we are in the future going to have to demonstrate that we are best serving the interests of Quebec agriculture in our present situation. To help us accomplish this, we would appreciate your comments and suggestions on how we might serve you better. Your suggestions would be very helpful to us in developing information and community services that are relevant and helpful to your needs and wants.

Gordon Bachman

Why Don't Canadian Swine Producers Use A.I.?

The greatest aid to livestock improvement that has been introduced into the practice of animal breeding is artificial insemination. By A.I. most of the limitations of natural mating can be overcome and the number of offspring from outstanding sires can be greatly increased. In the dairy and more recently beef industry, A.I. has been used extensively in the selection and propagation of "superior" bulls. But so far, A.I. has seen little application in swine production.

In Europe, and a number of other countries, swine A.I. centres are being supported by government funding. Primary reasons for this support is to aid in the control of disease, to promote livestock improvement and to facilitate crossbreeding.

Unofficial Estimates of the Number of First Services in 1971

U.S.S.R.	653,000
Netherlands	105,000
Japan	98,000
England	62,000
France	50,000
West Germany	50,000
Denmark	18,000
Sweden	10,000
Hong Kong	6,000
Canada and U.S.	Nil

If Canadian swine producers want to maintain or further develop an internationally competitive swine breeding industry, they need and should encourage effective government funding of boar testing and A.I. programs. Technically, swine A.I. is less difficult than A.I. in cattle. Conscientious hogmen can learn the techniques of semen collection, heat detection and insemination with little or no formal training. Some more adventuresome

producers have gone to do-it-yourself A.I. to maximize the use of a valuable sire, reduce the spread of disease from barn to barn or to save out-of-pocket costs for additional boars.

Usually boars are trained to mount a "dummy" sow for dependable collection of semen. But if a dummy is not available, semen can be collected by allowing the boar to mount a strong sow in good standing heat. A dummy can be constructed of materials usually available on the farm. An old water tank or log about 15 inches in diameter and four feet long can be covered with carpeting and mounted on a wood or pipe frame so that it is approximately 28 inches high. Frequently, your boars will mount the dummy without teasing. However, one of the main difficulties appears to be due to the fear of the boar being approached by man when mounting. This fear reaction is minimized when boars are accustomed to the presence of men and when the training takes place in the boar's own pen. If the boar is slow to mount, his sexual excitement can be increased by the presence of a sow, spreading sow's urine on the dummy or the presence of another male mounting.

Semen is collected by firmly grasping the cork-screwed tip of the boar's penis. Although not required, a disposable plastic gown can be worn during the collection. The semen may be collected in any one of several containers. We recommend a wide-mouth plastic, four-cup Thermos which protects the semen against rapid cooling and which is easy to clean. Following collection the semen should be

strained through clean gauze or cheesecloth to remove the gelatinous material. This gel contains very few sperm and is not beneficial for fertility. Since most attempts to keep the semen warm are as potentially harmful as they are beneficial, we recommend that the semen be stored in the Thermos at room temperature until insemination.

One collection normally contains one or two cups of fluid semen, which is adequate to inseminate four to eight sows. Each gilt or sow should be inseminated with a minimum of one quarter cup (60 ml) of semen. There is no advantage in using more than half a cup of semen per insemination. Thus, the Melrose squeeze bottle which holds 160 ml only needs to be filled half full per insemination.

Diluting boar semen to increase the number of services per ejaculate is not difficult but must be done with care to prevent killing the sperm and reducing the conception rate. As a rule of thumb, inexperienced hogmen should not dilute boar semen or store boar semen until they have achieved a satisfactory conception rate (70 per cent or better) with freshly collected, undiluted semen.

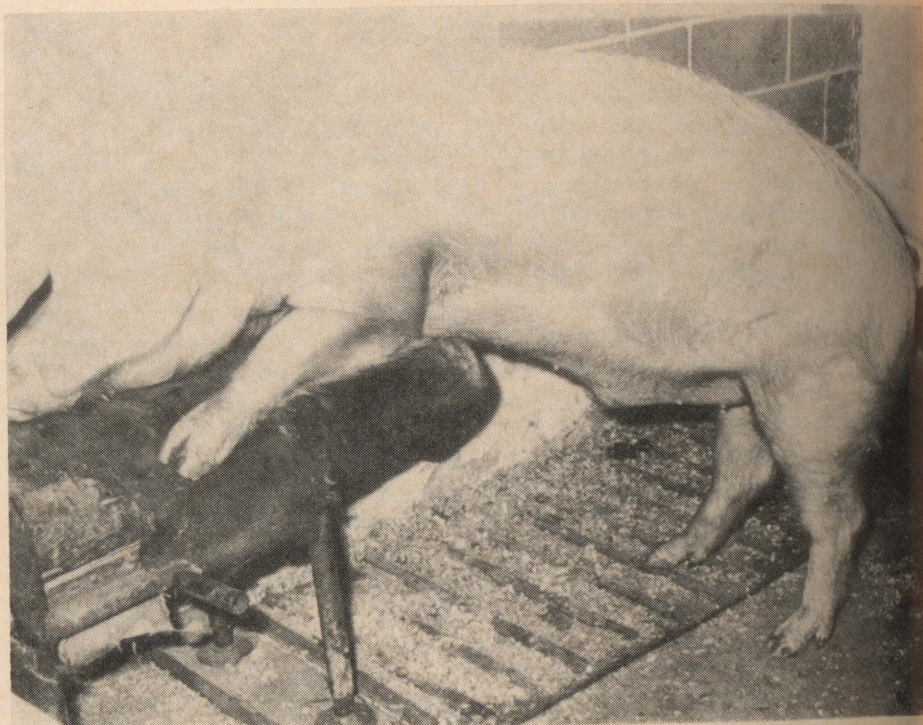
Diluents for boar semen are formulated 1) to maintain the water balance between the inside and outside of the sperm (called the osmotic pressure), 2) to provide energy for sperm metabolism and motility and 3) to minimize bacterial growth. One of the simplest diluents for boar semen is a skim milk-glucose diluent which contains 4.5 gms of skim milk powder,

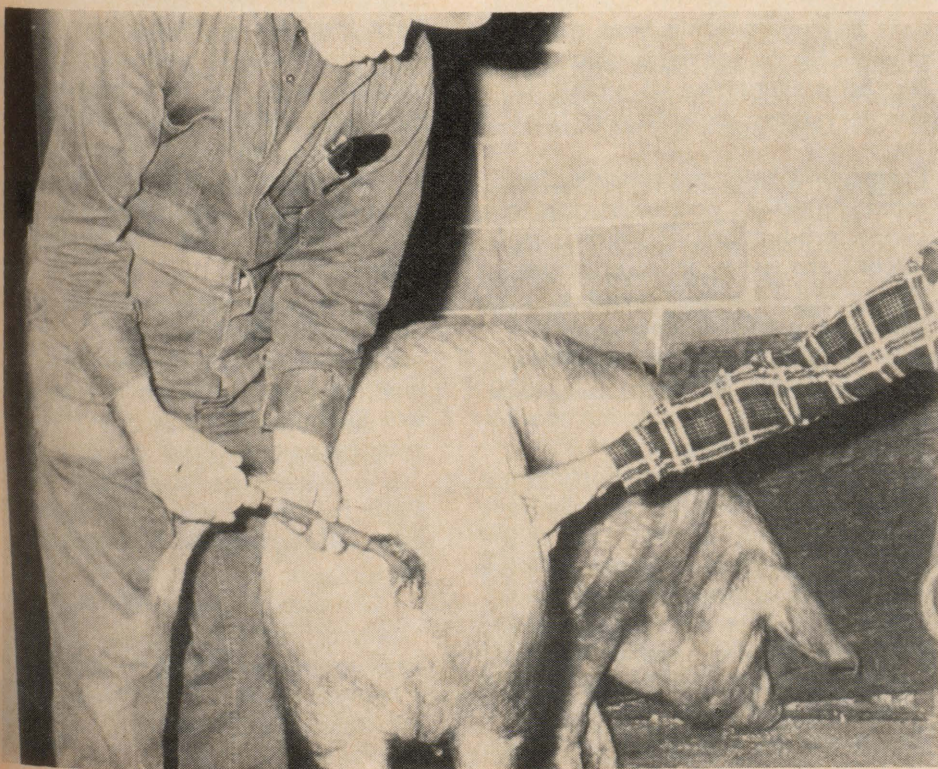
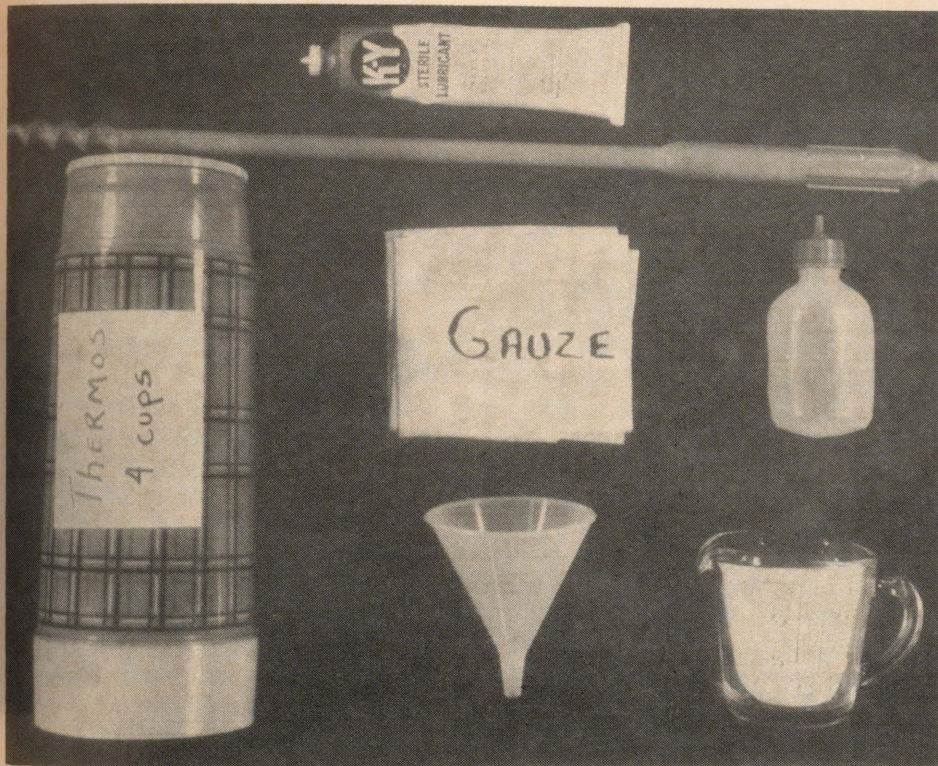
1.5 gms of glucose and antibiotics in 100 cc of distilled water. The skim milk powder is available in most grocery stores, and the local druggist should have the distilled water and glucose. Antibiotics can be omitted if the semen is not going to be stored for more than a couple hours. In fact, even though this diluent is an acceptable extender, it is not satisfactory for storing semen. Long-term storage of boar semen in the non-frozen form requires a much more complex diluent. Usually a modified Illini-Variable-Temperature (IVT) diluent is used for storage. Boar semen can be stored in IVT for up to three days without a significant drop in conception.

IMPORTANT TECHNICAL PROBLEMS ASSOCIATED WITH SWINE A.I. ARE HEAT DETECTION, DEEP FREEZING BOAR SEMEN, AND REDUCTION IN CONCEPTION RATE.

Probably the most critical problem with breeding sows artificially is determining the correct time for insemination. With A.I. the responsibility of deciding when to breed is transferred from the boar to the herdsman. Since some gilts show heat for as little as 12 hours, the herdsman should check heat twice a day.

How can you tell if a sow is in standing heat? The surest way is to use a teaser boar. The teaser boar is put in the pen with up to eight to 10 females. The boar's activities should be controlled so that he checks each female. It is not necessary to use a vasectomized boar or to let the boar mount each female. If the boar does mount, he should be pushed down before the onset of mating. The presence of the boar will be sufficient to induce the "riding or immobilization"





reaction in the females that are in standing heat. That is, the females will stand immobilized for the herdsman to sit astride their back. Ideally, the sow should be inseminated late on the first day and/or early on the second day of standing heat. Practically, it is very time consuming to check heat and inseminate twice daily. Ted Sutherland, Swine Herdsman, Macdonald College Farm, checks the sows every morning with a teaser boar as soon as they are finished eating. Sows in good standing heat are inseminated later that same morning or early afternoon. Females that appear to be coming into heat are checked in the afternoon, time permitting, and inseminated the next morning, if in heat. Even though the once-a-day heat detection with a boar and insemination are not as good as twice-a-day, the difference in labour required more than offsets the losses due to missing heat in the occasional female.

Sows in heat for two days are inseminated again on the second day providing semen is available.

Careful inseminations will result in improved conception. It is desirable to induce the "riding reaction" by sitting on the sow before or during the insemination. Lubricate the cork-screw tip of the inseminating pipette before inserting it through the vulva and into the vagina. Turn the pipette counter-clockwise to lock the pipette into the cervix. Semen flow can be controlled by applying pressure on the plastic bottle. Care should be taken not to rush the insemination. All equipment should be thoroughly cleaned following insemination. Boar semen and diluents are excellent media for bacterial growth. All equipment should be washed with hot water and mild soap, then rinsed to

remove all traces of soap. Soap left in the equipment will kill sperm. Finally, rinse the Thermos, inseminating bottle, and pipette with boiling, soft water and/or 95 per cent ethyl alcohol. Store the A.I. equipment in a clean, dry, dust-free area.

A.I. can reduce the time required for breeding compared to hand mating, if four or more sows are in heat on one day. With natural mating it takes approximately 20 minutes to breed each sow. With A.I. approximately 20 minutes are needed to collect the semen, five minutes per insemination and 10 minutes to clean the equipment. Thus, if more than four sows are in heat, the herdsman can save time and use his most valuable boar on all the females.

Synchronizing heats in a group of sows has been talked about for some time. However, to date, there are no products on the market for this purpose in sows. Swinemen must rely on good heat detection and skillful management. For example, batch weaning sows and moving replacement gilts into the breeding barn or pens about five to eight days before the desired breeding date results in some synchronization and an increase in the efficiency of A.I. Research on heat synchronization is being continued at Macdonald College and other Institutions in an attempt to develop a practical method to precisely control the time of heat and number of eggs ovulated. Effective methods for controlled heat would have a tremendous impact on the development of pig A.I. in North America.

Deep freezing boar semen became a reality in the fall of 1970 when Drs. Polge, Solaman and Wilmut in Cambridge, England, obtained nine litters with an average of 6.5 pigs per litter from gilts that were tubally inseminated with frozen-thawed boar sperm. Since this initial breakthrough, research workers in Sweden, Germany, Japan, and the U.S.A. have reported pregnancies with frozen boar semen. German scientists have reported as high as 80 per cent conception rate and 7.6 pigs per litter following conventional (cervical) insemination. However, generally, fertility with frozen semen has been below an acceptable level. In addition, a number of semen handling problems need further study before frozen boar semen can be used extensively in the field. It seems reasonable to assume that for the next few years some boar semen may be frozen for exportation or for the preservation of semen from the very rare "exceptional" boar.

Conception rate is probably the most important economic trait in swine production. Therefore, producers shy away from anything that might reduce conception including artificial insemination. Even though there are a number of advantages for using A.I., a 10 per cent drop in conception would result in A.I. being impractical under most conditions. Fortunately, conscientious hogmen usually experience only a small (about 5 per cent) drop in conception when they go to a do-it-yourself A.I. program. A.I. is not advisable for hogmen that are experiencing fertility problems. Difficulty in detecting heat or to get sows to settle are not uncommon problems

in the swine industry and with few exceptions the use of A.I. only increases the problems in these areas.

On the other hand, A.I. has the potential over the long-term to reduce breeding problems in the swine industry as it has in the dairy industry. Many producers do not have high level of fertility in their herd. A.I. is very helpful in defining the nature of fertility problems which can then be further studied and hopefully eliminated.

In general swine breeders should take a more active interest in and play a more active role in the most important economic trait influencing swine production, i.e., fertility. A.I. is only one of the many techniques that will influence livestock production over the next 20 or 30 years. Cattlemen are already talking about egg transfer and scientists are investigating the fertilization of eggs in a test tube, growth of embryos outside the uterus, splitting eggs into a number of identical twins, and altering the genetic make-up of the developing embryo.

"Successful livestock men of the past have been good animal husbandrymen. In the future they will likely have to be students of science as well."

Prof. R. Baker,
Dept. of Animal Science.

OUTLOOK FOR A BUOYANT STRAWBERRY INDUSTRY

Over the past 20 years there has been an upward trend in fruit consumption by Canadians. With annual consumption now over 50 million quarts (Table 1), the strawberry ranks among the most important fruit crops in Canada. In all likelihood, the demand for strawberries should continue to increase. As in previous years, strawberries harvested this season at Macdonald College have continued to be a sell-out and many disappointed customers were turned away.

The strawberry, similar to many other agricultural crops, is confronted with changing marketing situations and consumer preferences. On a recent field trip with Dr. L. Ricketson of Vineland, Ontario, and Dr. D. Craig of Kentville, Nova Scotia, strawberry breeders affiliated with the Ontario Ministry of Agriculture and Food and Canada Agriculture, respectively, we learned of some of the more pressing priorities and needs of the Canadian strawberry industry and the steps that are taken or proposed to keep abreast of the situation.

Production and Marketing Potential

British Columbia, Ontario, and Quebec are the three major strawberry producing provinces (Table 2). In Ontario the value of the strawberry crop rivals that of pears and ranks fourth to those of grapes, apples, and peaches. In Quebec the strawberry crop, which has an annual value of about \$2 million, ranks second only to that of the apple. The chief production areas in Quebec are in the regions of Deux Montagnes and L'Assomption, north of Montreal; St. Hyacinthe

and St-Césaire, east of Montreal; Trois-Rivières, and Quebec City.

Although strawberries produced in proximity to large metropolitan areas, such as those of Toronto and Montreal, are sold essentially to the fresh market, there is an enormous potential market for processing berries in Canada. For instance, Ontario imports some five million quarts of berries from the U.S. for processing due, among other factors, to a lack of locally grown cultivars that are highly desirable for this purpose. This turn of event is ironic since in the early 1960s about one third of Ontario's strawberry production was sold for processing. We also understand that there is a particular processor in Prince Edward Island who annually processes between 1½ to two million quarts of strawberries but has the capacity for at least five million quarts. Hence, the potential market for processing strawberries is virtually untapped by Canadian growers.

Commercial production of Canadian strawberries fluctuates a great deal, averaging about 30 million quarts annually over the past five-year period (Table 1). The increas-

ing consumption needs for strawberries on the Canadian market are met by annual importation of some 20 million quarts of berries, chiefly from the U.S. (Table 1). Hence, somewhat against traditional trends, we have heard from several sources of the idea of growing strawberries in eastern Canada for export to U.S. markets, such as New York City. The success and implementation of this proposal would involve an extension of the traditional three- to four-week strawberry cropping season by the use of very late varieties. In addition to higher returns to growers, an extended cropping season would undoubtedly alleviate the annual rush to "get the strawberries in." However, despite its enormous economic scope, such a proposal is viewed with skepticism by many growers, who already are investing a lot of money, time, and managerial expertise to a crop that is extremely perishable and requires very intensive care.

Quest for New Berries

The strawberry industry in Canada and North America has progressed substantially since the early days when berries were generally low

Table 1. Strawberry Supply in Canada

Year	Production	Imports	Total supply
		(million quarts)	
1962-63	25.46	20.75	46.21
1963-64	24.17	18.97	43.14
1964-65	30.87	24.01	54.88
1965-66	17.28	24.75	42.03
1966-67	30.70	18.34	49.03
1967-68	32.91	17.93	50.84
1968-69	33.09	18.84	51.93
1969-70	28.08	23.73	51.81
1970-71	32.36	20.42	52.78
1971-72	34.09	19.81	53.90
1972-73	21.00	—	—

Source: Dominion Bureau of Statistics.

yielding and of poor quality. Berries today under optimum management are capable of yielding 20,000 to 22,000 quarts per acre, although fairly efficient farmers have only been obtaining yields in the range of 8,000 to 12,000 quarts per acre. When it is considered that the break-even point for a strawberry operation is about 5,000 to 8,000 quarts per acre, depending on the type of operation and ease of obtaining labour, there is a wide profit margin still to be exploited by growers. In the quest for new berries, only selections that yield above 13,000 quarts per acre are considered promising at the Canada Agriculture Research Station in Smithfield, Ontario.

Since its introduction in 1957 from Ottawa, the cultivar Redcoat, outstanding for its superior yield, good fruit size, attractive medium red colour and conical shape, has been unrivaled in Canada as the leading fresh market berry. Although Redcoat retains its attractiveness after storage, its flavour is at most only fair and its internal colour light. It is somewhat inferior as a processing berry when compared with others more suited for this purpose and it is more difficult to hull (removal of the green calyx)

by machine. Hulling by hand labour is still one of the most costly of procedures in the strawberry processing industry.

Strawberry breeders are faced with the challenging task of improving upon the undesirable characteristics of Redcoat. Emphasis is being placed on developing berries that are well designed for the processing trade. Among other features, and in anticipation of a perfected strawberry machine harvester, berries for processing should be very firm, even in ripening for a once-over machine harvest, and capable of easy hulling by machine. To further facilitate the uses of mechanical harvesters and of picking-aids, cultivars that space runners evenly without forming a dense stand and fruits borne on upright peduncles are being sought.

Research institutions across Canada, besides performing routine cultivar evaluations, are continuously in search of new berries. Guelph University has a strawberry depository with over 5,000 individual selections, some derived from wild, rare, and exotic ancestries. In addition to strawberry cultivars such as Sparkle, Earlidawn, Bounty, and Guardsman, others such as

Tioga from California, Surecrop from Maryland, and Rossela from Italy are being evaluated at Vine-land. At St-Jean, Quebec, only evaluation of established strawberry cultivars and numbered selections is being conducted.

Although it can be described simply as somewhat of a hit or miss procedure, even by highly trained breeders, the shuffling and re-shuffling of genes with desired berry characteristics, as a result of crossings involving hundreds of different berry types, yield acceptable cultivars only in a few instances. Due to a high frequency of "win some, lose some" recurrences in breeding work, a compromise between what is desirable and what is not is often the beginning of a new cultivar. For instance, such a compromise often is made for firmness and ease of hulling, characteristics which are difficult to obtain together.

Management Aspects

Similar to many agricultural crops, interest is always directed at early berry cropping since such pickings command a high return on the fresh market. Introduced in 1956

TABLE 2. Commercial Strawberry Production by Provinces in Canada

	Production (million quarts)						Value (million dollars)					
	1968	1969	1970	1971	1972	1968-72 Ave.	1968	1969	1970	1971	1972	1968-71 Ave.
Prince Edward Island	1.05	1.65	0.99	1.68	0.27	1.13	0.25	0.36	0.26	0.44	—	0.33
Nova Scotia	2.50	2.40	1.80	2.50	1.20	2.08	0.68	0.68	0.59	0.78	—	0.68
New Brunswick	2.29	1.71	0.80	1.73	0.70	1.45	0.64	0.56	0.29	0.62	—	0.53
Quebec	7.60	9.10	7.70	7.80	4.93	7.43	2.19	2.19	1.96	2.13	—	2.12
Ontario	8.84	9.84	11.32	11.22	8.50	9.94	2.83	2.96	3.35	3.07	—	3.05
British Columbia	10.81	3.39	10.45	9.13	5.40	7.84	3.19	1.41	3.31	2.43	—	2.59
Canada	33.09	28.08	32.36	34.09	21.00	29.72	9.78	8.17	9.75	9.47	—	9.29

Source: Dominion Bureau of Statistics.

from Beltsville by the USDA, Earlidawn, the most popular early strawberry cultivar, is at most only moderately productive and highly acid in flavour. In a recent pilot test at Vineland, Redcoat grown under plastic tunnels was harvested one week earlier than the normal crop. The return on early yields of about 4,000 quarts per acre before the normal picking time for this cultivar was enough to offset the cost of the plastic and installation of the tunnels. However, the necessity for ventilation as supplied by a ventilator via air ducts within the tunnels presently makes such an operation costly, if not prohibitive especially on a large scale. With further improvements, this system of berry culture may prove to be feasible for smaller operations.

It is generally recommended that strawberries should not be cropped for more than two seasons, due to increasing weed problems, accumulation of viruses, and soil borne diseases in the plants, and general depleting vigour of stands. Even after all factors have been satisfactorily managed, the role of weather has a great influence on the success of any berry operation. For instance, last year some growers in the Maritimes lost up to 90 per cent of their strawberry crops due to insufficient snow cover and subsequent winter kill during the previous winter. Due to the increasing cost of replanting strawberries, it is becoming more obvious that the net return per year from renovated stands may remain attractive enough to defray investing in a replant operation. In production areas, such as those in Prince Edward Island, certain commercial growers are known to maintain profitable strawberry

stands for up to four or five years. At the Canada Agriculture Research Station in Smithfield, Ontario, there is a demonstration five-year-old renovated strawberry field that in all appearance is fairly vigorous and healthy.

The necessity of an effective weed control program is most important in a renovation program. Unlike the practice of a once-over, high rate herbicide application for conventional short-term strawberry stands, the current trend in renovated stands requires a more sophisticated herbicide program in which there is more frequent and smaller applications each year of a single or series of herbicides for both seasonal and long-term weed control. Various herbicide programs in Ontario at Smithfield and at Simcoe are yielding productive weed-free strawberry stands, although there is need for more investigations with different cultivars and with the rate and the time of applications.

Related programs are also in operation to study solid bed strawberry planting, the best planting system adaptable to machine harvesting. Cultivar responses to solid planting, the spacing of runners, yields from different sized solid beds, and the effects of renovation and other management practices are being observed.

Conclusion

The strawberry industry seems to require more promotion. In Ontario there is need for more interplay and communication between growers and agricultural extension fruit specialists. Growers do not tend

to keep abreast of the changing needs nor do they wish to innovate or take the risk of trying a new cultivar or a new technique in culture. Dr. Ricketson is suggesting the sponsoring, presumably by government funds, of a model-type strawberry farm operation in which records of all costs and operations can be demonstrated to growers. With some measure of success, growers in Prince Edward Island have formed a strawberry association to facilitate communication and exchange of ideas.

Although fresh market berries produced near the big markets of Toronto and Montreal earn premium prices, in strawberry growing regions, such as those in Prince Edward Island, which are more remote from such markets and where berries are produced chiefly for processing, there is a general reluctance by growers to expand production due to the comparatively low prices paid for processing berries. The current trend in popularity of pick-your-own operations in Ontario and elsewhere seems to be alleviating the shortage of strawberry pickers, especially for smaller operations. Apparently this trend has not yet caught on in Quebec. The strawberry agribusiness in Canada is buoyant and brisk and has a potential that is far greater than what growers are now exploiting.

Calvin Chong,
Research Associate
Department of Horticulture
and
M. Lareau,
Agronome,
St-Jean Research Station
Quebec.

Verticillium Wilt *Of Horticultural Crops*

Beneath the quiet exterior of the plant world a silent struggle is taking place. Much of this struggle is invisible with life for the survivor and death for the luckless loser. The greatest struggle is between the green plants and the colourless ones — the fungi which must obtain their nutrients from organic sources to survive.

Wherever green plants are grown there is a host of fungi lying in wait to parasitize them. Every breeze brings with it thousands of spores which lodge on the outside of the plant and penetrate through the epidermis or some opening into the living tissues. Every handful of soil contains thousands of fungal spores, many of which penetrate through the roots and parasitize green plants. As the fungus begins to grow within its host, fungal threads or mycelium spread through the plant pushing between cells, breaking into cells, and gaining nutrients from them. As a result the growth of the green plant is often hindered and death usually results.

One such fungal enemy of green plants of interest to the Department of Plant Pathology at Macdonald College has been the soil fungus *Verticillium*.

Almost all soils in Canada and the United States contain *Verticillium* as a common soil fungus. Not all strains of this organism are capable of causing disease in green plants, but if one crop is grown repeatedly in the same soil, some strains may become more able to cause disease, or the strains already adapted may become more numerous. Over 300 species of plants have been

reported as being infected by this fungus. These include flowers, trees, weeds, fruits, and forage crops.

Among the vegetables that are susceptible are beets, broad beans, tomato, eggplant, potato, pepper, cucumber, chicory, horseradish, and rhubarb. Vegetables that are more resistant or tolerant to this disease include cabbage, asparagus, onion, leek, broccoli, Brussels sprouts, cauliflower, celery, chives, parsley, peas, lettuce, rutabaga, spinach, and turnip. Corn, cereals, and other grasses are not attacked.

Young infected plants usually appear normal, but as the plants mature they may become stunted. Often stunting is the only symptom of the disease. Seriously infected plants may become yellow, the lower leaves may wilt, particularly in hot weather, and in some cases the leaves may even drop off. Symptoms become more pronounced as the disease progresses and often the plant dies. When the stems of diseased plants are cut open the vascular tissues show a dark brown discoloration often extending to the fruit.

Mature trees, with the exception of maples, are rarely killed by this disease. Silver, Norway, red, and sugar maples are frequently killed or seriously injured by this disease. The conspicuous external symptom on maple is sudden wilting followed by yellowing and finally browning of the foliage, which usually involves individual branches or part of the crown. Infected trees should be removed and burned. Where this is not possible all dead and dying branches should be cut off and destroyed.

Losses due to *Verticillium* are often high. In 1957 Oregon reported that the disease caused \$1 million losses to their potato crop. Control of wilt by chemicals has increased yields in Connecticut by as much as 46 per cent and has increased yields by two to 2½ tons per acre in New York.

Two species of *Verticillium* are most commonly described as causing wilt of horticultural crops. *V. albo atrum* has dark, dormant fungal threads and no microsclerotia, which are small, black resting bodies of fungus threads. The other species, *V. dahliae*, has no dark fungus threads and forms microsclerotia. The fungus gets its name because it bears its spores in whorls or verticils on upright stalks. The short-lived spores may be carried by wind or water. Contaminated soil adhering to machinery may also spread the fungus from one field to another. *Verticillium* may survive in the soil for 5 to 10 years living between crops in weeds or as microsclerotia or resting mycelium which form in great numbers on plant debris in the soil.

Infection may take place directly through the root hairs but is aided if rootlets are wounded or broken. Once inside the plant the fungus produces toxic materials which kill and discolour the cells through which it passes.

Although there are many strains of this fungus, each crop does not have its own particular strain or strains. For instance, strains of *Verticillium* which attack potato

(Continued on page 20)

The Family

Farm

Published in the interests
of the farmers of the province
by the Quebec Department of
Agriculture and Colonization

Crop Insurance Its place in Quebec Agriculture

The Quebec Crop Insurance Act was passed on June 29, 1967 and the Board started its first year of insurance operations in January 1968.

Among the principal factors leading to the introduction of crop insurance in Quebec were the particularly heavy crop losses from drought throughout the province in 1965 and repeated requests at that time by the Catholic Farmers' Union for a permanent and adequate measure to protect agricultural producers.

There is still a tendency in farming circles to think of crop insurance as a kind of social assistance measure as though it were a sort of guaranteed-profit or guaranteed-income plan.

It must be stressed that none of these terms are in keeping with the spirit in which crop insurance was conceived and put into effect.

First and foremost it must be understood and used as a tool of sound farm management, since it is an effective means of protection — the only one at the moment available to the farmer for insuring against crop losses caused by bad weather.

Its value and usefulness make it worthy of increasing acceptance by our farmers.

Crop insurance is an essential adjunct to the putting into effect of recommended farming techniques and, in our Quebec agriculture it has a specific role to play through incorporation in the financial set-up

of every farming enterprise. The larger the capital investment needed by a farming enterprise, the more crop insurance becomes a necessity to protect that investment.

In the operation of any commercial or industrial enterprise there are imponderable eventualities about which even the most dynamic entrepreneur is powerless and which, if they occur, may get him into serious financial difficulties and even bankruptcy. To cope with some of these imponderables, a serious person will use all the means at his disposal and hence take out various insurance policies.

The same reasoning applies to a farmer as the head of an enterprise. However efficient the financial and technical management of his farm, certain unpredictable factors are beyond his control. One of the most unforeseeable but, sooner or later, most inevitable of these is, undoubtedly, adverse weather conditions. Indeed, one rarely meets a farmer who has not at one time or another had to suffer the unhappy and irremediable consequences of a poor growing season.

Crop insurance, like an umbrella, is just the answer to these imponderables and anyone who makes his living by farming should make it an obligation to take out crop insurance and keep on doing so year by year. In this way, it will always be there in case of need to protect the man who has had the foresight to take advantage of it and to spare him the anxiety of seeing his enterprise financially burdened or irreparably endangered by climatic factors.

The Crop Insurance Board offers Quebec farmers coverage for a wide range of crops, as listed below with dates when they first became insurable:

Starting 1968, forage crops, meadow hay, greenfeed (cereal hay), silage corn, oats, barley, mixed grains, spring wheat, grain corn, and cigarette tobacco; 1969, winter wheat and sugar beets; 1970, cigar and pipe tobacco; 1972, late varieties of apples; 1973, potatoes and canning vegetables. Thus, the great majority of plants grown on the farms in our province are now covered by crop insurance plans.

More farmers would find it advantageous to insure their crops every year, for the following reasons:

— They pay only half the premium, the cost of paying the other half being shared equally by the government of Quebec and the government of Canada.

— The cost of administering the plans is not included when the premium rates are being calculated because that expense is also shared equally between the two governments.

— In certain cases and on certain conditions, payment of an assessment to insure forage crops may entitle the insured to draw compensation to carry out urgent field compensation for loss of pasturage when damages payable for forage crops are due to freezing of the ground or drought, and payment of "replacement indemnity".

— In case of losses, the crop insurance plan guarantees the insured party recovery of part or all of his operating costs.

— Crop insurance makes it easier for the insured to obtain credit and safeguards him from getting too heavily into debt.

— It also makes it possible to calculate yield averages more accurately and know exact acreages of insured crops.

— It promotes sound farm management and use of recommended farming methods.

— It covers crops against climatic conditions that are beyond human control.

It's no mistake to insure crops every year. If the crop is a good one there is no problem and the surplus production very easily pays the cost of insuring it. If the crop is a poor one, the insured is eligible for compensation which, all things considered, covers production costs as regards the time and money which were invested in them.

For all further information about crop insurance, please contact the regional representative of the Board in your territory or apply to the head offices of the Quebec Crop Insurance Board, Government Buildings, Quebec City.

Promotion of the Blueberry Industry

Blueberry production ranks fifth among the agricultural productions of the Saguenay-Lake St. John region — closely behind poultry, cattle, and swine. Being well aware of this, the Quebec Department of Agriculture wishes to take full advantage of the region's natural propensities and the available research results and to protect the investment made in an integrated program of production, processing, storage and preservation, and marketing.

AIMS

The well-defined objectives of a policy of restrained and calculated intervention are as follows:

I—To take full advantage of the natural blueberry crop in the forest — which has always been and still is our steadiest, cheapest, and most abundant source of supply (to the extent of about 80 per cent).

We can do this in three ways:

- a) by controlling picking in order to avoid the deplorable waste that occurs at the start;
- b) by directing the pickers so as to ensure complete picking;
- c)) by improving the presentation of blueberries so as to rebuild their somewhat impaired reputation on the market.

II—To try out some of the current research results on a pilot blueberry field selected from one of the 22 that the Department has established, with the aim of:

- a) demonstrating the value of present research results to a population which is inclined to be doubtful of them;

b) making a cost-benefit analysis of such an enterprise, finding the production cost of blueberries per pound, etc;

III—To inculcate in blueberry producers a sense of responsibility for and interest in the success of their fields and, to this end, allow producers' syndicates as much self-management as possible — on the following two conditions:

- a) that they reach production targets;
- b)) that they satisfy minimum requirements as regards maintenance of the blueberry fields conceded to them.

IV — To find the best way of making the Saint-Bruno factory — the best equipped in Canada — more profitable.

As this factory's returns are directly proportional to the quantity of berries processed, it is essential that it be responsible for production at all levels and it have an interest therein.

THE DEPARTMENT'S CONTRIBUTION

To attain the objectives it has set itself, the Department offers the following aid:

Objective I-a

1. a system of control worked out with the Department concerned;
2. the construction and maintenance of dams for the "La Lièvre" and other territories;

Objective I-b

The employment, throughout June and from July 24 to August 10, of four men working under the

direction of our technical personnel, to locate the crop and direct pickers to the best places;

Objective I-c

The gradual introduction, over a two-year period, of a new container made of synthetic material to replace the traditional wooden box and all other containers used for handling industrial blueberries;

Objective II

The maintenance of a pilot blueberry field where all available findings of current research would be applied. The results obtained would be passed on to the blueberry producers through demonstrations and by circular letters;

Objective III

Efficiency premium for 1973, 1974, 1975, 1976 respectively six cents, five cents, four cents, and four cents.

To qualify for this premium, production must be 35 pounds to the acre in 1973 and show a progressive annual increase of 25 per cent in the succeeding years to reach the following yields,

33 pounds per acre in	1974
34 pounds per acre in	1975
37 pounds per acre in	1976

In this connection, however, unfavourable weather conditions (drought, late frosts in spring and early frosts in the fall) will be taken into account.

Attainment of this objective would result in a yield of close to 2,000,000 pounds from our rented blueberry fields in 1976 and stabil-

ize the total value of the industry at over \$2,500,000 so that it would exceed that of any other agricultural production except the dairy industry.

Objective IV

The blueberry freezing plant at Saint-Bruno is operated and managed by an administrative committee whose mandate is to maintain and develop the enterprise by rational, intensive, and diversified methods. The enterprise is considered to be a public service and all blueberry dealers may qualify for the benefits available to them at the rates set.

The quality of the services rendered in 1972 foretell an increase in the plant's clientèle and in the quantity of berries processed in 1973. The committee's first concern remains the profitability and diversity of operations with a view to stimulating the agricultural economy in the agriculture-food sector of the region concerned.

Preventive Veterinary Care of Cattle

You will probably agree that it would be most helpful and profitable if, during the few minutes we have at our disposal, I could give you some magic panacea for preventing disease among cattle, somewhat after the fashion of a set of maintenance instructions for a car or a snowmobile. But the problem of animal disease is more complicated than that and, if we are to keep our cattle in good health, we must take into account

several factors such as the age, feeding and environment of the animal and the type of production it is kept for.

Because of the rapid development of cattle raising in Quebec as elsewhere, during recent years, the farmer has come to realize that animal disease often costs dearly. If he dispassionately calculates the losses caused by disease, it will become obvious to him that what is really costly is not the treatment but the loss of production during sickness and convalescence and sometimes the loss of the animal.

That is why the standpoint of veterinary medicine is also changing and developing. Without thereby abandoning therapeutic or curative veterinary medicine, we are tending increasingly towards a collective or herd veterinary medicine. There is a growing interest in those factors we recently talked about in order to determine their effect on the health of cattle and so be able to prevent disease from breaking out in a herd.

Why preventive veterinary medicine? Preventive veterinary medicine has two aims: 1. to eliminate disease from a herd or reduce it to a minimum; and 2. to prevent disease from ever appearing in a herd.

When we speak of disease thus, it must always be borne in mind that we mean not only diseases of an infectious nature like those caused by bacteria, viruses, parasites, etc., but also non-infectious disorders which always involve disturbance of the animal organism's normal functions, such as the troubles associated with calving,

milk fever, acetonomia, infertility of non-infectious origin, indigestion in all its forms, diseases that are so often of alimentary or nutritional origin.

In this connection it is of interest to mention, "en passant", that according to the reports of the veterinary practitioners in the contributory animal health insurance plan, 49 per cent of calls on their services by Quebec farmers were due to diseases of an infectious nature and 51 per cent were for help in treating non-infectious disorders (in which germs were not involved). Hence, in talking about a program of preventive veterinary medicine we have to think about or include all factors, besides microorganisms which can affect the health of animals.

What should a preventive veterinary medical program comprise?

In launching a preventive veterinary medical program, we must take into consideration and understand, as far as our present knowledge permits, the entire set of factors that contribute to the well-being of the animal and likewise the entire set of factors that can disturb its functioning and behaviour, limit its production, and often reduce its resistance to disease.

Among these factors that must be taken into account are the following:

1 — Pathogenic microorganisms: These cannot be completely eliminated but, as we have to live with them, we have to make sure

that the chances are on our side by making the animal's environment as healthy as possible. This implies attention to such factors as water, air, soil, and buildings which call for constant cleanliness including disinfection.

2 — The animal's comfort: Cattle raising is characterized nowadays by the concentration of livestock in more or less limited areas, under increasingly artificial conditions. It is therefore essential that the buildings be adequate, that the feed contain the constituents that are essential or helpful to the animal's health and productivity.

3 — Inheritance: As we know that certain breeding lines of livestock are more disease-resistant than others, we must select our animals bearing in mind their innate resistance to disease as well as their animal husbandry qualities. Furthermore, we must be aware of possible undesirable consequences of consanguinity resulting from artificial insemination if bulls are not wisely chosen, since in the long run this may lead to more abnormal calves, decreased fertility, and increased mortality in the early post-natal period.

Is a preventive veterinary medical program necessary?

As you are the persons immediately concerned, it is up to you to answer this question but personally I think the answer is yes, because your main source of income from the farm are your herds and, being experienced and alert, you are anxious to safeguard your productive assets. The Quebec Department of Agriculture and Colonization clearly

believes in the desirability of such a program since it places at your disposal, free of charge, veterinarians (whose training is directly related to animal health) to help you protect that productive investment, namely your herd.

What conditions are required for a successful preventive veterinary medical program?

Briefly, they are as follows:

- 1 — The producer must be serious, interested in his profession, realistic and without self-deception in facing up to his problems, and must objectively size up his yield and ask himself pertinent questions;
- 2 — While asking himself questions and recognizing that he has problems, he must also be interested in solving them. He must have confidence in his veterinary adviser and strictly carry out the preventive measures recommended to him because these measures make up an interdependent set and, if some are neglected, the preventive program will lose a fair amount of its effectiveness;
- 3 — If necessary, there must be appropriate technical and financial aid available.

Even if these three conditions are met, we do not pretend that we can solve all your animal health problems but, together, we shall be able to solve some of them.

Preventive veterinary medicine can be summed up in three words — hygiene, environment, and feeding.

Veterinarians, farmers and milk producers, we have a common aim — the health of the herd. Why not pool our knowledge and

skill in the interests of achieving it. Let us never forget that our cattle did not ask for the conditions we impose on them. It is all of us here present who have changed them and who demand of our animals performances for which nature did not prepare them. To get maximum profit from our cattle, let us *respect them*.

Jean-Pierre Asselin,
Veterinarian

Anti-Brucellosis Vaccination

(Federal-provincial agreement)

Farmers may apply to have their calves immunized with vaccine of clone 19 in conformity with the provisions of the federal-provincial agreement.

For this purpose, the farmer must undertake to:

- a) Have his young cattle vaccinated at the age now stipulated or at an age which the veterinary Director-general may decide in future;
- b) Retain the service of a veterinarian legally qualified to practise within the province;
- c) Facilitate the work of vaccination by rounding up, sorting out, and immobilizing the animals he is entitled to have vaccinated;
- d) Permit and facilitate the identification of the vaccinated animals by means of a special tag in the right ear of calves or by markings assigned to each animal by the Canadian National Livestock Records;
- e) Not to allow any antibrucellosis vaccine to be used on his cattle except that which will be supplied by the Canada Department of Agriculture;

- f) To assume responsibility for the expenses incurred for these vaccinations and for paying the veterinarians who perform them;
- g) Not to claim any compensation for accidents, diseases, harm or supposed harm which he may attribute to or connect with the veterinarian's operations, including the administration of the vaccine;
- h) Not to add any bovine animal to his herd except for animals which satisfy the provisions of paragraphs a, b, or c of section 156E, Part XIII-A of the animal regulations made under the Animal Contagious Diseases Act (R.S.C. 1970, c. A-13).

The farmer recognizes that:

- a) He has been informed that vaccination alone is not enough to ensure effective protection against brucellosis;
- b) He is not entitled to any vaccination certificate if the treatment is administered to an animal outside the stipulated age range or with vaccine whose effectiveness is not recognized, or if the identity or age of the animals has not been accurately given.

Horse Rearing

The constant aim of the horse division is first and foremost to foster proven and recognized methods of breeding and rearing that are conducive to a steady rise in the standard of quality of the entire stock. For this purpose, technical services are provided for breeders of the various breeds.

Management of Production Units

1. Help for prospective buyers in locating and choosing stallions and

- brood mares of real worth;
2. Annual inspection of stallions intended for service. Every animal so inspected will be the subject of a written report to the Stallion Enrolment Board with a view to the issuing of an enrolment certificate.
3. At the time of the aforesaid inspection, technical advice is given about practical mating methods, care of pregnant mares and foals at birth and weaning, and feeding of stallions at service, pregnant mares, and growing foals.

Education

1. Seasonal advice and articles concerning the present state and long-term development of horse rearing in Quebec and elsewhere in the world;
2. On request, demonstrations of judging different types of horses with emphasis on correct stand and easy action especially in the case of breeding animals;
3. Lectures and special courses on the rearing of work horses and other types;
4. Information by mail in response to requests for information on the traits and capacities of the various breeds, the breeding and raising of horses in general, and special care and attention they may need at different ages according to their condition and use.
5. Horse judging at the various shows held each year in the province.

Guide

The Department of Agriculture has prepared a guide to the various ways of using horses. The guide is revised annually to keep abreast of all new developments in this field.

QWI

Western Barbecue at Banff

While attending the Federated Women's Institute of Canada's 6th National Convention held in the Banff Centre, Banff, Alberta, in June we were invited to a barbecue on June 21. It was held on the Indian Grounds about three miles from Banff. It was a beautiful evening, sunny and warm. Buses picked up about 525 of us and took us to the Indian Grounds. The first ones to arrive saw several gophers, but by the time we arrived I guess the poor animals had given over to the F.W.I.C. and all we saw were the gopher holes.

There were three large tents and in each a camp fire was laid; these were not lit as it was much too warm. Picnic tables with benches were placed around the inside of the tents. There was just enough top to shelter the tables and the centre was open to let the sun and light in.

We sat around enjoying western music. Two westerners, Tom McClaskie and George Fisher, played and sang with members from the different provinces taking part. Alberta sang "The Prairie Rose", one member, Mrs. MacMillan, played the spoons, and our "Belle Province" was asked to sing "Alouette", which was done with the help of all present. Everyone was then told to "Get the nosebags on." No one needed a second invitation to get in line. The aroma of the large pieces of beef cooking on the open barbecue had our appetites whet up in good shape! They served huge slices of the delicious beef, potatoes baked in foil with a huge

piece of butter on them, baked beans, tossed salad, rolls, relishes, numerous kinds of pies and coffee. I can assure you we all enjoyed our eats and all that went with them.

We were entertained again and many joined in the singing and dancing. We were welcomed by Mr. Bud Brewster. Mrs. Brewster and her daughter Allison sang "I don't care who knows it, I like the country way of life." Another daughter Karen joined them in singing "In the Blue Canadian Rockies," after which Mrs. Brewster thanked all of us for coming, saying it was a pleasure to be with the members of the F.W.I.C.

We had a very enjoyable drive back to the Centre where some of us strolled around admiring the view. The scenery with the sun shining on the snow-capped mountains, the beautiful buildings, and grounds is something we will never forget.

We then went into the Donald Cameron Hall and watched some of the dancers who were attending a Square Dancer's Conference, which was also being held at the Centre. We enjoyed their dancing, the beautiful costumes, and their caller. A nice climax to a very enjoyable evening.

Miss Edna L. Smith,
1st Vice President,
Quebec Women's Institute.

New Ideas for School Fairs

School Fairs have been a Q.W.I. project for over 50 years. Each year it is their aim to hold better

Fairs. The W.I. are always looking for ideas to make their programs and thus the Fairs more interesting. This year the idea is to exchange programs and prize lists.

With this in mind a meeting of Agriculture Conveners and School Fair committees was held at the Annual Convention. Prize lists and samples of exhibits were brought to the meeting and ideas and programs were exchanged. One of the questions debated was: is this an agricultural fair or, as it is called a School Fair, should it not be an exhibit of work completed at school?

Looking back to the first Fairs, seeds were given out by the government, poultry was exhibited, and agronomes took an active part. It was an agricultural fair. Then home arts were added — canning of vegetables, sewing, and cooking. Well-written essays, exhibits of writing, painting, and art were included. Poster-making proved to be an attraction. One Fair includes exhibits of school exercise books, printing and writing books, arithmetic, geography, phonics, and French exercise books. Therefore, it has also proved to be an educational fair.

New ideas brought to the meeting were: exhibits of the interior of a church made inside a pasteboard box. The church had stained glass windows, pews, kneeling stools, pulpit, and miniature hymn books. The preceding year the exhibit was the interior of a girl's bedroom. This year's request was — using a box 12 inches by 16 inches — construct a diagram of your home and

grounds. Other ideas included: Make a colt's halter using baler twine; square dancing; banner making; macrame; artwork from dried seeds and weeds; make a snowmobile from a gallon size plastic bottle; posters on safety and ecology; winter, summer, and fall apples; decorate a birthday cake, to be judged on decorations only; school lunch, should be nourishing and neatly packed; quilt blocks; dressed dolls; knitted slippers; soap carving; fretsaw work; wood carving; collection of 12 kinds of wood, named and mounted, and novelties made by hand.

A few counties have a luncheon or picnic at noon and entertain the children at a Sport's Day while the exhibits are being judged. Another county has public speaking. Speakers are judged on appearance, posture, and enunciation as well as subject matter. The younger children give recitations.

Perhaps some counties could incorporate their products into a Fair. The biggest fish caught or local ores and minerals would prove interesting.

The Fairs are financed by the Institutes and each Fair requires a lot of work. Seeds must be bought, packaged, and delivered. Money must be raised through food sales, card parties, and by requests to the community for additional prizes. Prize lists have to be made up and printed, a suitable location has to be found, and, of course, the Fair must be advertised, judges must be appointed. The day of the Fair arrives. Tickets have to be made out, exhibits arranged and judged, and the exhibitors enter-

tained. But when the prizes are awarded and the news items in the local papers tell of the youngsters' delight, we realize that this is another worthwhile project of the Women's Institute.

Mrs. Gordon French,
Q.W.I. Agriculture Convener.

"We Chose Go"

In this busy world of ours there comes a time when every individual and every group needs to pause long enough to decide where they are at and consider where they are headed.

This time came to our **Granby West W.I.** (Shefford County) about two years ago. We found ourselves faced with many problems because of illness, members holding full or part time jobs, and raising young families. Our attendance, our funds, and our morale was low. Members hesitated to take office as they felt they did not have sufficient time to carry the load. We spent many meetings lamenting over these things.

A decision had to be made — stop or go! We chose go, and this is what we did. We formed a program committee to work with the executive and help carry part of the load. We gave up lamenting over the attendance and got busy and planned more exciting and stimulating programs to encourage it. We planned programs in which the group could all be more involved, programs that were educational and programs that were fun.

We looked carefully at our Creed instead of just saying it. We looked at our W.I. sisters and knew that

they were a part of us, that we could not separate; we needed to work, laugh, and perhaps even cry together. "That in the big things of life we are one."

The past year we have continued to visit a local nursing home each month. Our monthly meetings have found us in costumes out of the past, in formal dress, learning how to decorate cakes, how to make slacks in 15 minutes, sharing poems, taking a first aid course, and making plans for a summer picnic.

Once again we are having happy times. Of course, the obstacles are still there but by working together we will overcome some of them. Our best wishes to other groups who may share our problems.

A Trip to the Past and the Present

The sun was coming from behind a cloud on the morning of June 25 when a chartered bus carrying 47 **Pontiac Women's Institute** members left Shawville for a trip to the Adelaide Hunter Hoodless Homestead at St. George, Ontario.

Our first stop for refreshments was at Hespeler where we visited the Pioneer Stone Church which had been erected in 1861. Then we moved on to the Hoodless Homestead, a beautiful old white house where the founder of the W.I. was born.

We were met by the Homestead hostess, Mrs. T. O. Loveless, who welcomed us and invited us in to see the home. She gave us a most informative tour, after which we went out to enjoy the spacious and beautifully kept picnic grounds.

Right: Mrs. Helen Northrope of Black Cape W.I., Bonaventure County, thanking members for honouring her on her 85th birthday.

Below: Rhythmic exercises performed under the direction of Mrs. I. M. S. Robbins at the Annual Convention.



Mrs. Loveless served homemade cookies (and were they delicious), tea, and coffee.

Next stop was Toronto where reservations had been made at the Westbury Hotel. Many retired early, but some of the group went sightseeing and enjoyed eating out. The next morning, because of the visit of the Queen and Prince Philip, we were unable to tour City Hall and the Museum as we had planned, but we enjoyed seeing the preparations that had been made for the Queen. We saw the Guard of Honour waiting, the people crowding the streets, even the red carpet!

We spent the rest of the morning visiting Ontario Place. It was well worth seeing and then were taken on a sight-seeing tour of Toronto. Next stop was Oshawa where we had two hours to eat and shop. At Peterborough we

visited the lift locks and saw a boat going through. Then homeward bound with a short stop at Mazinaw Lake for treats. We arrived back in Shawville at 9 p.m.

Many members are now asking, "When do we go on another trip?"

Over the Years

Black Cape, W.I., a branch of Bonaventure County Q.W.I., was organized in 1949. The objectives of the Institute remain the same, but the method in which they are attained has changed through the years.

The local school and the family farm formed a basis for W.I. work during the early years. Sports equipment was given to schools, hot lunches served, and scholarships awarded to students. Industry changed the rural life to urban.

New citizens were welcomed. Adult education in language and crafts became a priority.

In 1960 an eight-year-old girl, Eleneta Manlapas, of the Philippines, was adopted. Support continued for 10 years and ended with a gift of money to aid her in establishing a sewing shop. Last year a five-year-old girl, Jenny Valdez, of Bolivia, was adopted.

The Black Cape W.I.'s annual dinner for members was held at the Ruisselet Restaurant in Caplan on June 25. Mrs. Helen Northrope, a charter member of Black Cape W.I., was honoured, the occasion being her 85th birthday. On behalf of the members, President, Mrs. Colin Campbell, pinned a corsage of red rosebuds on Mrs. Northrope and presented her with a crewel embroidered handbag. She extended best wishes for many more years



of health, happiness, and continued activity for "Home and Country." Mrs. Northrope expressed her appreciation in a few well chosen words.

Coming Events

Franklin Centre W.I. will again have a booth at Havelock Agricultural Fair, in mid-September, where hand-craft articles and baked goods will be sold.

Dear W.I. Members:

After reading the Q.W.I. news in the July issue of this magazine I feel praise is due our Managing Editor, Miss Hazel Clarke, on the excellent story of our Provincial Convention. Working with this unassuming lady during the past two years has been one of the pleasant rewards of my convener-ship. I have found Miss Clarke a real friend of Q.W.I. and one who often goes "beyond the call of duty" on our behalf. We thank you, Miss Clarke.

Congratulations to Mrs. Mary Worster . . . 100 years young and still an interested member of Lennoxville. Mrs. Annie Hamilton and Mrs. Myra Walsh received Life Memberships at **Aubrey-Riverfield**.

Bury won first prize in the Canada day parade with their float — the theme, "We've come a long way, Baby, from caveman days to modern office."

Wakeham W. I. (Gaspé Co.) gave a donation to aid about 25 children of the "Special Class" at Gaspé High School on their visit to the "Zoo" in Bonaventure County. The

children had a glorious time on this overnight trip. This "Special Class" is made up of children that one could not actually call retarded but are slow to learn — for instance, children who should be in Grade 5 but can only do Grade 2 work. There are two teachers who devote special attention to them so many hours a day. (A letter of thanks was received from the children with signatures varying from kindergarten to good penmanship.)

"Dear Mrs. Baird:

We all want to thank you for the money which your branch donated toward our trip to Bonaventure. We had a wonderful time.

The ladies in New Carlisle gave us supper and packed lunches for the Zoo. We all enjoyed the train, the motel and the Zoo. It is hard to say which was the most fun.

Sincerely

The Special Education Students
of Gaspé High".

A 10-day vacation for a child at "Arctic Hut" camp, Frelighsburg, (retarded children's camp) was made possible by the \$60 donation of **South Bolton W.I. Compton Co.** branches gave donations for six-week classes to be held in Lennoxville for children who need extra help. **Brompton Road** sent a child to camp.

Card parties are popular in many branches for fund raising. A **Douglastown** member who had never played cards in her life, said she made history by arriving at the card party with her knitting.

Two games played when **Pioneer** entertained **Grenville**: 1) Visitors were paired off with members and given specially prepared duplicate sheets. The goal was to decipher the names of 20 of the women present from clues on short words sounding like the syllables of their names. 2) In the form of an auction each one present bid five cents for a chance to guess the contents of a brightly wrapped box which held a lemon. The winner of the "lemon" also received a more desirable prize as well. Proceeds of the auction were presented to the visitors.

A number of branches visited museums and others held picnics. **Lennoxville** displayed maps, programs, etc. from their twin branch in Terrace B.C. A former member of **Upper Lachute — East End** is now a member of this branch's twin in Langley, B.C. and recently brought news from B.C. as she re-visited her "home" branch.

Everyone answered **Aylmer East's** roll call. . . name an animal or bird native to Australia. The program gave more information about this country. **Richmond Hill's** members each brought a guest to their meeting. **York** older members showed the younger ones how to make a square for a quilt. All members signed a petition at **Fordyce** protesting the closing of Catherine Booth Hospital.

With fall meetings beginning I close with a thought from **Dalesville-Louisa's** roll call . . . "resolve that W.I. will enrich your life, not wear it out."

Mrs. Perley Clark,
Q.W.I. Publicity convener.

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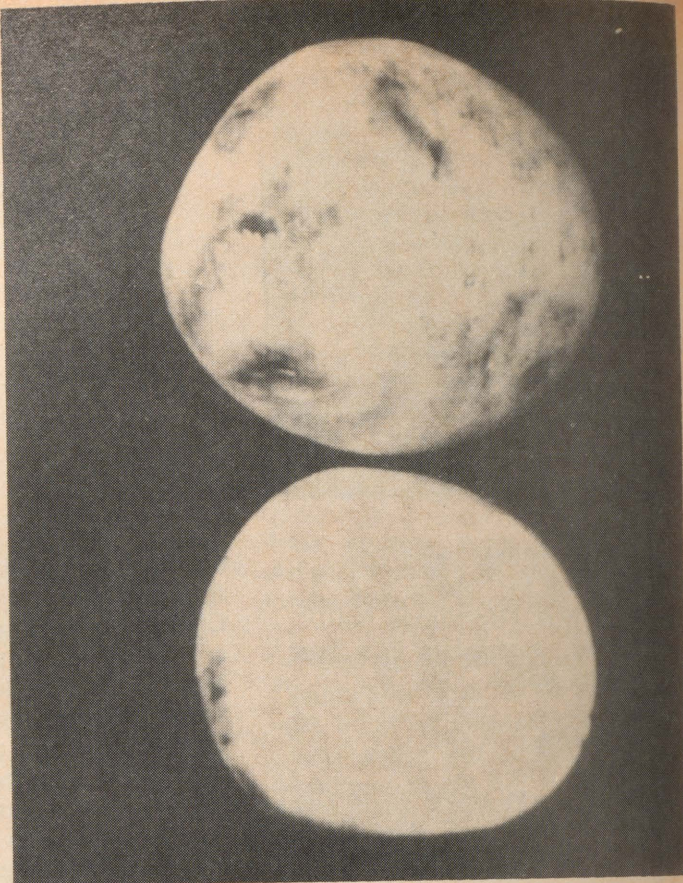
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Verticillium wilt of potato — tuber symptoms showing discoloration around eyes.

(Continued from page 10)

may also attack eggplant and other vegetable crops and vice versa.

Verticillium wilt appears to be favoured at air temperatures of 70 — 80 degrees F. Symptoms are most severe when heavy rains or irrigation follows dry weather. Soil type, and its acidity, are minor factors in disease development, although this disease is less severe in acid soil.

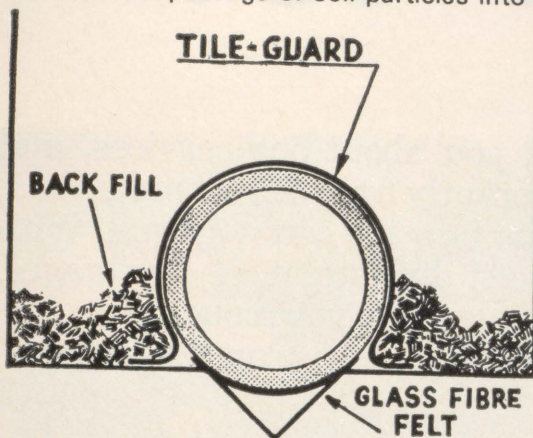
Control recommendations include: long rotation with unrelated crops, eradication of weeds, and proper drainage. In the greenhouse *Verticillium* can be controlled by soil sterilization. The rate of spread of the disease and severity of damage can be reduced if diseased plants are destroyed. Growers are advised to practice the best possible field sanitation and use as long rotations as are economically feasible. Any well adapted and otherwise satisfactory wilt resistant varieties which are available should be grown.

J. W. Sheppard,
Postgraduate Student,
Department of Plant Pathology.

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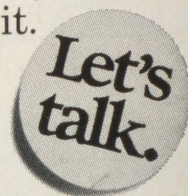


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